

BELAVSKIY, Ye. P., USPENSKIY N. A., SHORSHER, S. B.

"An analysis of the incidence of hemorrhagic nephrosonephritis in the Yaroslav oblast over a 10-year period (1947-1957)." p. 116

Desyatoye soveshchaniye po parazitologicheskim problemam i prirodnoocharovym bolezniam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences US R, No. 1 25pp.

Oblast Sanitary-Epidemiological Station/Yaroslav'

TSIMBALIST, D.F.; KOVINA, Ye.I.; BELAVSKIY, Ye.B.; USPENSKIY, P.N.

Results of using pertussis-diphtheria vaccine for a 3 year period
in the prevention of diphtheria. Vop. okh. mat. i det. 6
no. 2:39-41 F '61. (MIRA 14:2)

1. Iz kafedry mikrobiologii Yaroslavskogo meditsinskogo
instituta i Oblastnoy i gorodskoy sanitarno-epidemiologicheskoy
stantsii.

(WHOOPIING COUGH) (DIPHTHERIA)

TSIMBALIST, D.F.; BELAVSKIY, Ye.B.; USPENSKIY, F.N.

Effectiveness of associated vaccination in the prevention of
diphtheria. Zhur. mikrobiol. epid. i immn. 32 no.7:63 Je '61.

(MIRA 15:5)

1. Iz Yaroslavskogo meditsinskogo instituta, Yaroslavskikh oblastnoy
i gorodskoy sanitarno-epidemiologicheskikh stantsiy.

(DIPHTHERIA--PREVENTIVE INOCULATION)

BELAVTSEV, M. I.

USSR/Medicine - Infectious Diseases Oct 50

"Comparative Evaluation of Specific Methods
Against Plague in Swine," M. I. Belavtsev, Vet,
Min Sovkhozes USSR

"Veterinariya" No 10, pp 21-25

Describes 3 methods of vaccination: with anti-
plague serum conferring active immunity, adminis-
tered in therapeutic double dose to diseased
animals and in single dose to healthy animals
(simultaneous vaccination); passive vaccination;
inoculation with crystal violet vaccine. Compari-
son of the 3 methods shows simultaneous vaccination

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USSR/Medicine - Infectious Diseases (Contd) Oct 50

to be best. It confers full immunity for long time,
while passive vaccination does not, and loss of
animals during vaccination is low. Crystal violet
method aggravates bronchial pneumonia conditions
and requires high expenditure of vaccine.

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BELAVENTSEVA, Galina Nikolayevna

[Origin of man. Life of the human body. Index of popular scientific literature] Proiskhozhdenie cheloveka. Zhizn' chelovecheskogo organizma. Ukazatel' nauchno-populiarnoi literatury. Izd.2., dop. i perer. Moskva, 1956. 45 p. (MIRA 13:9)
(Knigi o prirode i ee zakonakh, vyp. 5).
(MAN--ORIGIN)

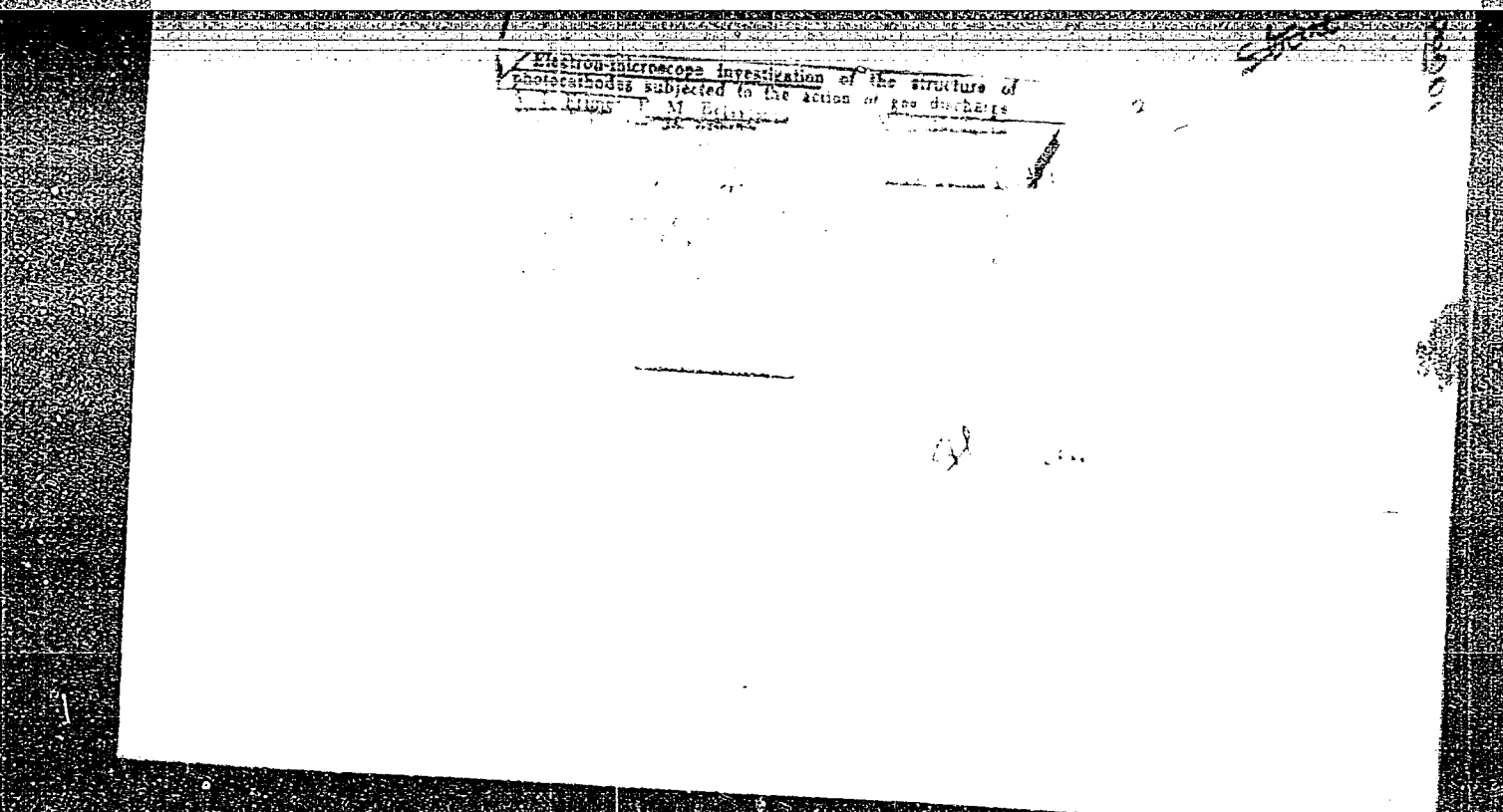
POGLAZOV, B.F.; VAZINA, A.A.; BELAVTSEVA, Ye.M.; KITAYGORODSKIY, A.I.

Roentgenographic and electron microscopic study of tail coatings of the phage T-2. Dokl. AN SSSR 163 no.2:488-490 J1 '65. (MIRA 18:7)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR; Institut biologicheskoy fiziki AN SSSR i Institut elementoorganicheskikh soyedineniy AN SSSR. Submitted September 30, 1964.

Centralized production of magnesium alloys. A. E.
Krivobry, G. B. Hefel and L. S. RYZENKO. *Ukrainian*
Chemical Journal 1956, 32, 1-24. (Received 1955, May 15.)
The authors describe the method of producing cast alloys of magnesium
and magnesium alloys with molten fibrous materials. The
method of producing the alloys is described. The alloys are
produced by the reaction of magnesium with molten fibrous
materials. The reaction takes place in 20-30 sec. and is very quiet.
provided the reagents are freed from oil and are dry. The
alloys are produced in the form of ingots.

cf



FRIMER, A.I.; BELAVTSEVA, Ye.M.; GERASIMOVA, A.M.

Electron microscopic study of photocathodes subjected to gaseous
discharge effects. Izv. AN SSSR. Ser. fiz. 20 no. 10: 1195-1196 0 '56.
(Photoelectric cells) (Electron microscopy)

BELAVTSEVA, Ye.M.

Electronographic and electron microscopic study of chlorophyll
a b and gramicidin S [with summary in English]. Biofizika 2
no.5:628-632 '57.
(MIRA 10:11)

1. Laboratoriya elektronnoy mikroskopii pri Otdelenii biologicheskikh nauk AN SSSR, Moskva.
(CHLOROPHYLL) (GRAMICIDIN--S)
(ELECTRON DIFFRACTION EXAMINATION)
(ELECTRON MICROSCOPY)

BELAVTSEVA, Ye. M.

"The Effect of Electrons on Natural Organic Substances During
Examination of Them by the Electron Microscope,"

paper submitted for presentation at Fourth Int'l. Conference on Electron
Microscopy, Berlin, GFR, 10-17 Sept 58.

Lab. Electron Microscopy, Acad. Sci. USSR.

C-3,800,829, 25 Jul 58

MOROZOVA, R.S., BELAVTSEVA, Ye.M.

Light-and dark-field electron-microscopic examination of chloroplasts
in *Bellis perennis* [with summary in English]. *Biofizika* 3 no.3:
265-268 '58 (MIRA 11:6)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR,
Moskva, (for Morozova). 2. Laboratoriya elektronnoy mikroskopii
prii Otdeleniy biologicheskikh nauk Akademii nauk SSSR, Moskva
for Belavtseva).

(ELECTRON MICROSCOPY)
(CHLOROPLASTS)

SOV/70-4-3-23/32

AUTHOR: Belavtseva, Ya. M.

TITLE: The Action of Electrons on Natural Organic Compounds in the Electron Microscope and the Electronograph

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 3, pp 421 - 422 + 1 plate (USSR)

ABSTRACT: Specimens of β -carotin, chlorophyll a + b, gramicidin-C and iodo-gramicidin were examined with the UEM-100 electron microscope and the EG-100 electronograph. For a current to the object of $10 \mu\text{A}/\text{cm}^2$ all these crystals gave sharp diffraction patterns with spacings corresponding to those given by X-ray methods. At currents of $1 \text{ mA}/\text{cm}^2$ and greater the sharp lines changed to diffuse rings. Different materials had different sensitivities. After irradiation at $600 \text{ W}/\text{cm}^2$ their solubilities were often decreased and the absorption spectrum of chlorophyll was changed. On irradiation all specimens became less crystalline but long irradiation (3-5 min) at less than $1 \text{ W}/\text{cm}^2$ caused no detectable changes. There are two effects, pure heating and ionisation to be distinguished so

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SOV/70-4-3-23/32

The Action of Electrons on Natural Organic Compounds in the Electron Microscope and the Electronograph

that control electronograms of gramicidin-C were taken at higher temperatures. Up to 250 ° the reflexions were sharp and above 280 ° the material became amorphous. The change occurring on heating from 250 to 280 was different in character from that produced by irradiation. The ionisation appears then to be the most important effect. With high accelerating voltages, low loading of the object and short examination times, sensitive organic materials can be studied without appreciable structural changes. There are 1 figure and 7 references, of which 2 are Soviet, 2 English, 1 German and 2 Japanese.

ASSOCIATION: Laboratoriya elektronnoy mikroskopii pri otdelenii biologicheskikh nauk AN SSSR (Electron Microscope Laboratory of the Section of Biological Sciences, Ac.Sc., USSR)

SUBMITTED: October 13, 1958

Card 2/2

BELAVTSEVA, Ye.M.; VOROB'YEVA, L.M.; KRASNOVSKIY, A.A.

Study of the structure of aggregated chlorophyll. Biofizika 4
no.5:521-532 '59. (MIRA 14:6)

1. Institut biokhimii imeni A.N.Bakha AN SSSR, Moskva i Laboratoriya
elektronnoy mikroskopii AN SSSR, Moskva.
(CHLOROPHYLL)

AUTHORS: Stoyanova, I. G., Belavtseva, Ye. M. SOV/48-23-6-21/28

TITLE: An Investigation of the Thermal Action of Electrons Upon the Object in an Electron Microscope (Issledovaniye termicheskogo deystviya elektronov na ob"yekt v elektronnom mikroskope)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 6, pp 754-757 (USSR)

ABSTRACT: The passage of electrons through the object heated the latter, and two methods of estimating the temperature of the object are given: a) Temperature determination according to the variation of the electron-microscopic image of some substances in the case of the liquefaction or evaporation (Ref 1), and b) according to the variation of its diffraction picture in the case of the thermal action of an electron beam. These variations occur only at certain temperatures. In the present paper a method is described, which permits the immediate determination of any temperature variation of the object. A special microthermocouple is used for this case, which is described in detail. The characteristic line of this microthermocouple does not differ from that of a normal one, and the temperature of the object is shown by four diagrams in dependence on

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An Investigation of the Thermal Action of Electrons
Upon the Object in an Electron Microscope

SOV/48-23-6-21/28

a) the thickness of the object, b) amperage, c) the influence exercised by an electrolytic network. Finally, the influence exercised by the diaphragm is investigated and it was found that if such a diagram is used with a radius of 40μ , the temperature of the object in the case of a 30000-fold enlargement amounts to 50°C , and that, without such a diaphragm, it amounts to 200°C with 10000-fold enlargement. There are 6 figures and 3 references.

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24 (2), 9 (3)

AUTHOR:

Belavtseva, Ye. M.

SOV/20-125-5-14/61

TITLE:

The Law of Interchangeability for the Process of
Disordering Some Crystalline Compounds Under the Action of
Electrons of Medium Energies (Zakon vzaimozamestivosti dlya
protssessa razuporyadocheniya nekotorykh kristallicheskikh
soyedineniy pod deystviyem elektronov srednikh energiy)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 5,
pp 1005-1006 (USSR)

ABSTRACT:

Reference is first made in short to some earlier papers dealing
with this subject. In the present paper the law of inter-
changeability in the interaction of medium-energy
electrons is checked by means of the electronographical method.
In this way the transition time of natural and organic
compounds from the crystalline into the amorphous state was
determined for various intensities of radiation. The test
objects were irradiated in the electron microscope UEM-100,
by means of which it is possible to obtain electron-
microscopic recordings as well as electron diffraction
pictures. The current density j_0 on the object was determined

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The Law of Interchangeability for the Process SOV/20-125-5-14/61
of Disordering Some Crystalline Compounds Under the Action of Electrons of
Medium Energies

by means of a Faraday cylinder which was fixed on the level
of the end-screen. From the current density j_{screen} on the screen
the current density j_0 on the object was then computed. As
the law of interchangeability was investigated under
the action of electrons upon a dielectric applied to the
process of the structural transformation of substances,
heating of the object had to be eliminated as a possible
cause of the structural changes observed. For this purpose a
method of irradiation was selected, in the case of which
heating of the object did not exceed 50° . These substances
lose their crystalline properties in the course of electrono-
graphical investigation in consequence of the ionizing effect
produced by the electrons. The test objects were applied
from the solutions onto a colloidal carrier film. By the
irradiation of β -carotin and gramicidin the following was
found: The time within which the substance goes over from the
crystalline to the amorphous state depends on the intensity of
the irradiation and also on the energy of the impinging

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The Law of
of Disordering Some Crystalline Compounds Under the Action of Electrons of
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Interchangeability for the Process SOV/20-125-5-14/61

electrons. With a decrease of irradiation intensity and an increase of electron energy the time during which the investigated substances are in the crystalline state under the beam increases. An electron diffraction picture shows the diagrams of β -carotin before and after intense irradiation. The second figure shows the curves of the dependence of the time of exposure $n_0\tau$ which is necessary for transition of crystalline carotin into the amorphous state, upon the energy current intensity for 3 various values of the accelerated voltage. Also the curves plotted for gramicidin take a similar course. With an increase of irradiation intensity the product of n_0 with the duration of exposure τ decreases, especially within the range of low energies. In the case of a constant energy of the impinging electrons the transition of the dielectric from the crystalline into the amorphous state is therefore not uniquely determined by the product $n_0\tau$. In the case of the ionizing influence exercised by electrons upon

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carotin and gramicidin a deviation from the law of interchangeability therefore occurs. Apparently, the disordering processes of carotin- and gramicidin crystals depend not only on the total number of electrons impinging upon the object, but also upon the intervals of time of their incidence. Thus, the collective effect exercised by the electrons is of importance. This deviation becomes noticeable especially at low irradiation intensities. The author thanks Professor Ya. L. Shekhtman and V. M. Fridkin for valuable advice. There are 2 figures and 10 references, 8 of which are Soviet.

ASSOCIATION: Laboratoriya elektronnoy mikroskopii pri Otdelenii biologicheskikh nauk Akademii nauk SSSR (Laboratory for Electron Microscopy of the Department of Biological Sciences of the Academy of Sciences, USSR)

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SOV/20-127-2-62/70

17(0)
AUTHOR:

Belavtseva, Ye. M.

TITLE:

How to Prevent Changes of Biological Objects Caused by the Heating During the Investigation in the Electron Microscope

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 2,
pp 453 - 454 (USSR)

ABSTRACT:

The current density on the object necessary in modern electron microscope in the case of considerable enlargements leads to an intensive heating of the object. The temperature may attain here several hundred degrees (Refs 1-4) and often changes the object (Ref 5). Different cooling devices have hitherto served for the reduction of this temperature. The author suggests a method which renders these devices superfluous. The electron beam has also an ionizing effect. Different high-molecular substances, e.g. polyethylene et al become meltable in consequence of the radiation effect of the electrons of high energy (Ref 6). The infusibility of biological objects in the electron microscope can make possible their investigation without the mentioned cooling devices. The author investigated in this connection the following substances: a)

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How to Prevent Changes of Biological Objects Caused by SOV/20-127-2-62/70
the Heating During the Investigation in the Electron Microscope

Chloroplasts of daisies (*Bellis perennis*), b) crystalline colloidal a + b chlorophyll (the latter at pH 8.6); crystals of : c) β - carotene, d) of gramicidin C and e) of desamino-gramicidin. Preparations of a), b) and d) were produced according to methods described in the references 7,8. The preparations of the other substances were obtained from an ethereal or alcoholic solution. The electron microscopical investigation of the influence of the heating in vacuum between 30 and 300° showed that the heat sensitivity of each of the crystalline substances differs. Chlorophyll is most sensitive and changes already at 60-70°. The β -carotene are partially melted (oplavleny) at 170°, those of the two gramicidins at approximately 270°. The mentioned chloroplasts heated at 250-300° had partially melted solid sections (Fig 1 b). The picture was quite different in the heating of the same objects in consequence of the electron irradiation under the microscope: At a current density of $j = 1 \cdot 10^{-2}$ and higher neither the otherwise so sensitive crystals nor the colloidal particles of the chlorophyll are fused, whereas the crystals of the relatively more heat-resistant carotene and the two gramicidins melt independently of their thick-

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How to Prevent Changes of Biological Objects Caused by the Heating During the Investigation in the Electron Microscope SOV/26-127-2-62/70

ness. If, however, the objects concerned were irradiated before with electrons of low intensity for 3-5 minutes, no changes occur in the course of a further investigation even at a sufficient current density (Fig 2b). A peculiar "electronic fixation" of the biological objects took place. The time necessary for this fixation differs at a constant irradiation intensity in individual objects. The fusion of the relatively heat-resistant compounds is apparently caused by the fact that the high temperature on the object (200-300°) is attained before they become remeltable. There are 2 figures and 8 references, 4 of which are Soviet.

ASSOCIATION: Laboratoriya elektronnoy mikroskopii pri Otdelenii biologicheskikh nauk Akademii nauk SSSR (Laboratory of Electron Microscopy at the Department of Biological Sciences of the Academy of Sciences, USSR)

PRESENTED: March 23, 1959, by A. L. Kursanov, Academician

SUBMITTED: March 23, 1959

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BELAVTSEVA, Ye. M., Cand Phys-Math Sci -- (diss) "Research into the action of electrons on unstable objects in the electron microscope." Moscow, 1960. 16 pp; (Academy of Sciences USSR, Inst of Chemical Physics); 150 copies; free; list of author's work at end of text (10 entries); (KL, 22-60, 130)

S/020/60/133/005/034/034/XX
B004/B064

AUTHORS: Mnyukh, Yu. V., Belavtseva, Ye. M., and Kitaygorodskiy,
A. I.

TITLE: The Morphology of the Molecular Packings in Linear Poly-
esters ✓

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 5,
pp. 1132-1135

TEXT: In the present paper, the authors continue their study of the molecular packing by electron microscopic examination, electron diffraction pictures and small-angle X-ray pictures. The small-angle X-ray pictures indicated a periodicity of the order of magnitude 100 - 200 Å; the size of the superperiod increased with the length of the chemical structural unit (Table 1: polyesters of decamethylene glycol with oxalic, succinic, glutaric, adipic, azelaic, and sebacic acid). As was the case with other linear polymers with uniform chain (Refs. 4-8), the authors could also for linear polyesters (molecular weight 2000 - 3000) prove the existence of monocrystalline forms, partly developing spiral-like

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The Morphology of the Molecular Packings
in Linear Polyesters

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terraces, partly monocrystalline layers (Fig. 1). The microdiffraction pictures (Fig. 2) showed that the molecule axes are perpendicular to the layers. The height of the terraces is explained (according to A. Keller) by the "bending period" by the example of n-paraffins, polyethylene, and polyester (Fig. 3). For decamethylene glycol ester, the period of the chemical structural unit is 17 - 30 Å, for icosamethylene glycol ester 30 - 43 Å. The electron microscopic pictures yielded for the terrace heights of the first-mentioned esters values of 15 - 35 Å, and 40 - 70 Å for the latter. Since the X-ray pictures reflected, however, only the diffraction picture of the sub-cell, neither confirming the superstructural periodicity (100 - 200 Å), nor that of the crystalline layers, the authors conclude that the terrace height of the macrocrystals is no constant quantity. Electron-microscopic examinations of samples crystallizing from the melt (Fig. 4), yielded dendritic single layers consisting of parallel threads that united to form bands of a width of approximately 130 Å and a height of approximately 30 Å. If crystallization was inhibited, spherulitic forms resulted. The authors thank E. I. Fedin for assistance and S. V. Vinogradova for placing the samples at their disposal. There are 4 figures, 1 table, and 13 references: 3 Soviet, 3 US, and 3 British.

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The Morphology of the Molecular Packings
in Linear Polyesters

S/020/60/133/005/034/034/XX
B004/B064

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk
SSSR
(Institute of Elemental-organic Compounds of the Academy
of Sciences, USSR)

PRESENTED: March 23, 1960, by I. V. Obreimov, Academician

SUBMITTED: March 3, 1960

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BELAVTSEVA, Ya.M.; MNYUKH, Yu.V.

Some forms of morphological structures in linear polyesters.
(MIRA 14:5)
Vysokom. soed. 3 no. 2:213-214 F. '61.

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Esters)

32815
S/020/62/142/001/011/021
B104/B102

5.5330

AUTHORS: Belavtseva, Ye. M., and Fridkin, V. M.

TITLE: Electrophotographic method in electron microscopy

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 1, 1962, 67-68

TEXT: Electrophotographs of electron beams (accelerating voltage, 60 kv) were directly taken by a J3M-100 (UEM-100) electron microscope. The instrument was adapted to serve both as an electron microscope and as an electron diffraction apparatus. Amorphous selenium layers applied on metal backings (6.9 cm) were used as electrophotographic films. They were positively charged in the dark by a corona discharge in air. After the usual exposure in the electron microscope, the films were developed using a dry developer. Electrophotographs were obtained with both adaptations of the apparatus. These provisional experimental results prove that electrophotographs can be taken directly with an electron microscope. The selenium plates used were as sensitive as ordinary diapositive plates. The current density of the electron beam hitting the plate ranged between 10^{-8} and 10^{-11} a/cm². Above 10^{-8} a/cm², the plates

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were depolarized completely, and no pictures could be taken. A. Ye. Kriss and I. S. Zheludev are thanked for interest. There are 2 figures and 6 references: 3 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: W. D. Oliphant, *Discovery*, 15, 182 (1954); R. G. Vyverberg, H. E. Clare, I. H. Dessauer, *Nondestructive Testing*, 13, 35 (1955); M. Ardenne, *Progr. IV Intern. Congress Electron. Mikr.*, September, 1958, Berlin, 1959. X

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR), Institut kristallografii Akademii nauk SSSR (Institute of Crystallography of the Academy of Sciences USSR)

PRESENTED: August 1, 1961, by A. V. Shubnikov, Academician

SUBMITTED: July 31, 1961

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BELAVTSEVA, Ye.M.; FRIDKIN, V.M.

Electrophotographic method in electron microscopy. Dokl. AN
SSSR 142 no.1:67-68 Ja '62. (MIRA 14:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Institut
kristallografii AN SSSR. Predstavleno akademikom A.V. Shubnikovym.
(Microphotography) (Electron microscopy)

L 18130-63

EWP(j)/EPF(c)/EWT(1)/EWT(m)/BDS/ES(v)
Pc-4/Pr-4/Pe-4 RM/MAY/WW

AFFTC/ASD/ESD-3

ACCESSION NR: AP3004570

S/0032/63/029/008/0966/0968

AUTHORS: Belavtseva, Ya. M.; Gumargaliyeva, K. Z.

TITLE: Investigation of synthetic polymers and molecular crystals by the method of negative contrast

SOURCE: Zavodskaya laboratoriya, v. 29, no. 8, 1963, 966-968

TOPIC TAGS: synthetic polymer, molecular crystal, negative contrast, negative staining, caprone, dacron, stilbene, naphthalene

ABSTRACT: The method of negative contrast staining (used in virology) has been applied to the study of the synthetic polymers caprone and dacron ¹⁵polyesters, and molecular crystals of stilbene and naphthalene. ⁷ Caprone and dacron fibers were homogenized, placed on a background film, and treated with phosphotungstic acid at pH 7.2. The light zones correspond to the fibers, and the dark zones - to the acid. In the case of monocrystals of polyesters the negative contrast was observed only upon staining by phosphotungstic acid at pH 1.7. Since the crystals of stilbene and naphthalene are readily distilled in a vacuum, they

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ACCESSION NR: AP3004570

must be immediately treated with a drop of neutralized phosphotungstic acid. Due to the enveloping effect of the acid, it is possible to observe in the electron microscope traces of the evaporated crystals. Orig. art. has: 3 figures.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
(Institute of Elementoorganic Compounds, Academy of Sciences, SSSR)

SUBMITTED: 00

DATE ACQ: 26Aug63

ENCL: 00

SUB CODE: PH

NO REF SOV: 001

OTHER: 005

Card 2/2

L 18962-63 EMP(j)/EWI(m)/BDS/ES(v) AFFTC/ASD Pc-4/Pe-4 RM/MAY

ACCESSION NR: AP3006597 S/0020/63/151/006/1356/1357

AUTHORS: Belavtseva, Ye. M.; Gumargaliyeva, K. Z.;
Kitaygorodskiy, I. A. 67
66

TITLE: Electron microscopic analysis of the structure of
phosphoro-tungstic acid-treated caprone and lavsan
fibers. 15

SOURCE: AN SSSR. Doklady*, v. 151, no. 6, 1963, 1356-1357.

TOPIC TAGS: microscopic analysis, plastics, phosphoro-
tungstic acid, caprone fiber, lavsan fiber,
polyethylene terephthalate, 6-hendecanone, KOH,
gold-platinum dust.

ABSTRACT: Since an X-ray study of the shape, size, and
contact regions of different sides of high-polymeric
materials did not produce a desirable result, the same
problem was attacked with an electron microscope. Fibre
was initially mechanically dispersed in distilled water, then
spread over a grate, covered with a supporting film and air

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ACCESSION NR: AP3006597

dried. After that, a drop of 2% solution of phospho- tungstic acid in water was put over the material. Acid was neutralized to pH 7-7.2 with 1 N KOH. After 3 to 5 minutes, excess acid was removed with filter paper and dried. Another portion of dispersed fiber was treated in vacuum with gold-platinum dust. Electron microscopic photographs show that both fibers consist of fibrils, but the structure of these fibrils was not revealed. On the other hand, photographs of samples treated with phospho-tungstic acid show the structure of the fiber through a few layers, which makes it possible to establish the difference in shape and orientation of the fibrils in both materials. Orig. art. has: 3 figures.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of organometallic compounds, Academy of sciences, SSSR).

SUBMITTED: 11Feb63

DATE ACQ: 27Sep63

ENCL: 00

SUB CODE: CH

NO REF SOV: 000

OTHER: 003

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BELAVTSEVA, Ye.M.

Negative contrasting method in electron microscope studies
of macromolecular compounds. Vysokom. soed. 5 no.12:1847-
1849 D '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soedineniy AN SSSR.

BELAVTSEVA, Ye. M.; GUMARGALIYEVA, K. Z.; KITAYGORODSKIY, A. I.; VLASOV, A. V.

"Staining method used for graft polymer investigation by electron microscopy."

report submitted to 3rd European Regional Conf, Electron Microscopy,
Prague, 26 Aug-3 Sep 64.

BELAVTSEVA, Ye. M.; FRIDKIN, V. M.

"Die Anwendung der Elektrofotografie in der Elektronenmikroskopie."

report submitted for 3rd European Regional Conf, Electron Microscopy, Prague,
26 Aug-3 Sep 64.

BELAVTSEVA, Ye.M.; PETROV, Yu.M.; TSVANKIN, D.Ya.

Structure of cellulose treated with phosphotungstic acid.
Vysokom. soed. 6 no.4:684-690 Ap '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soedineniy AN SSSR.

BELAVTSEVA, Ye.M.; GUMARGALIYEVA, K.Z.; CHEMERIS, I.I.; DONOVSKIY-YANCHUK, A.G.

Use of the UZDN-1 ultrasonic disperser in electron microscopy. Zav.lab.
30 no.12:1478-1480 '64. (MIRA 18:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

SLONIMSKIY, G.L.; KORSHAK, V.V.; VINOGRADOVA, S.V.; KITAYGORODSKIY, A.I.;
ASKADSKIY, A.A.; SALAZKIN, S.N.; BELAVTSEVA, Ye.M.

Physicochemical means of regulation of supermolecular structures
and mechanical properties of amorphous polyarylate F-1. Dokl.
AN SSSR 156 no. 4:924-925 Je '64. (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Korshak).

POGLAZOV, B.F.; BORKHSENIUS, S.N.; BELAVTSEVA, Ye.M.

Reconstruction and crystallization of tail sheaths of the T₂ phage. Biokhimiia 29 no.6:1143-1149 N-D '64.

(MJRA 18:12)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR, Moskva; kafedra biokhimii Gosudarstvennogo universiteta, Leningrad, i Institut elementoorganicheskikh soyedineniy AN SSSR, Moskva. Submitted June 10, 1964.

ANDRIANOV, K.A., akademik; SLONIMSKIY, G.L.; KITAYGORODSKIY, A.I.; ZHDANOV, A.A.; BELAVTSEVA, Ye.M.; LEVIN, V.Yu.

Supermolecular structures of highly elastic polymers. Dokl. AN SSSR 166 no.3:593-594 Ja '66.

(MIRA 19:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

BELAVTSEVA, Ye.M. (Moskva)

Negative contrasting of biological objects by electron microscopy.
Usp. sovr. biol. 60 no.3:438-453 N-D '65.

(MIRA 19:1)

L 14571-66 ENT(m)/ENT(j)/T Wm/RM

ACC NR: AP6004390

(A)

SOURCE CODE: UR/0020/66/166/003/0593/0594

AUTHOR: Andrianov, K. A. (Academician); Slonimskiy, G. L.; Kitaygorodskiy, A. I.;
Zhdanov, A. A.; Belavtseva, Ye. M.; Levin, V. Yu.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elemento-
organicheskikh soedineniy Akademii nauk SSSR)

TITLE: Morphological forms of high-elastic polymers 14455

SOURCE: AN SSSR. Doklady v. 166, no. 3, 1966, 593-594

TOPIC TAGS: morphological form, high elastic polymer, silicone, polysiloxane

ABSTRACT: Recent studies of morphological forms in high-elastic polymers have dis-
proved the older theory of high elasticity which is based on the idea of random en-
tangled macromolecules. V. A. Kargin and associates (DAN, 144, 1099, 1962) have
observed fibrillar structures in these polymers. In this study the morphological
forms of high-elastic polymers have been studied with polyaluminodimethylsiloxanes
(I) synthesized by polycondensation of aluminum butoxide with α , ω -dihydroxypoly-
dimethylsiloxane. The morphological forms of I were investigated by electron micro-
scopy. I was shown to have a globular structure with globular formations varying in
size from 50—100 to over 1000Å. The small globules were, possibly, macromolecules.
The large globular formations consisted of small globules which were either aggregated
as a result of molecular interaction, or linked by chemical bonds formed in polycon-

Card 1/2

UDC: 541.68

L 14571-66

ACC NR: AP6004390

densation, or both. This globular structure, formed in two steps, is apparently one of the common morphological forms in amorphous polymers both in the high-elastic and the glassy (G. L. Slonimskiy V. V. Korshak, et al. DAN, 156, 924, 1964) states. The presence of globular and above-mentioned fibrillar morphological forms in high-elastic polymers raises the following problems: 1) fundamental review of the older theory of high elasticity; 2) studies of the effect of the morphological forms of amorphous polymers and their high-elastic and mechanical properties; 3) determination of the effect of the synthesis conditions and conditions for the formations of a solid or elastic body on the type of morphological forms produced. Orig. art. has: 1 figure.

[B0]

SUB CODE: 11/ SUBM DATE: 20Jul65/ ORIG REF: 007/ ATD PRESS: 4190

CC
Card 2/2

L 16103-66 EWP(j)/EWT(m) RM/WH
ACC NR: AP6003250 (A)

SOURCE CODE: UR/0020/65/165/006/1323/1324

AUTHOR: Slonimskiy, G. L.; Korshak, V. V. (Corresponding member AN SSSR);
Vinogradova, S. V.; Kitaygorodskiy, A. I.; Askadskiy, A. A.; Salazkin, S. N.; Belavtseva, Ye. M. 51
53

ORG: Institute of Hetero-organic Compounds, Academy of Sciences, SSSR (Institut
elementoorganicheskikh soyedineniy Akademii nauk SSSR) B

TITLE: Difference in supramolecular structures of amorphous polyarylates obtained
by interfacial polycondensation and high-temperature polycondensation in homo-
geneous media 744155

SOURCE: AN SSSR. Doklady, v. 165, no. 6, 1965, 1323-1324, and insert facing
p. 1324

TOPIC TAGS: polyaryl plastic, interfacial polycondensation, polycondensation,
polymer, impact strength, tensile strength

ABSTRACT: Electron-microscopic and mechanical studies were carried out on special-
ly synthesized types of F-7 polyarylates (products of polycondensation of tereph-
thaloyl chloride with phenolphthalein anilide). The results fully confirmed the
hypothesis that in interfacial polycondensation, when the polymer is formed at the
interface of two liquid phases in which it is insoluble, the supramolecular
Card 1/2 2

UDC: 541.64

L 16103-66

ACC NR: AP6003250

2
structure should be globular, whereas in homogeneous polycondensation in a solvent medium, the structure of the polymer is predominantly fibrillar. The mechanical properties were consistent with these observations: polyarylate F-7 prepared by 15 polycondensation in a homogeneous medium, had a greater impact and tensile strength and higher softening point than polyarylate F-7-M, synthesized by interfacial polycondensation. This fact is particularly notable, since it shows that an amorphous polymer of the same chemical structure can have different softening points depending upon the supramolecular structure. Orig. art. has: 1 table.

SUB CODE: 11,07/ SUBM DATE: 14Jul65 / ORIG REF: 004

Card 2/2

E 00829-67 ENT(m)/EWP(j)/T IJP(c) WW/JAJ/RM

ACC NR: AP6027769 (A) SOURCE CODE: UR/0190/66/008/008/1365/1367

AUTHOR: Korshak, V. V.; Mozgova, K. K.; Yegorova, Yu. V.; Gumar-galiyeva, K. Z.; Belavtseva, Ye. M.

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: Electron-microscope investigation of pemosores

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1365-1367

TOPIC TAGS: monomer, graft copolymer, pemosore

ABSTRACT: The structure of multigraft copolymer pemosores was studied. The analysis of grafted films of polyethyleneterephthalate and poly-ε-caproamide with different vinyl monomers was done using carbon-platinum replicas in the UEMV-1000 electron microscope. The graft changes the morphology of the surface structure considerably, whereupon the changes grow with the increase of quantity of the grafted monomer. A difference in the character of grafting was also found in the case of polyethylene-terephthalate and poly-ε-caproamide with different grafted monomers.

Card 1/2

UDC: 678.01:53

L 00829-67

ACC NR: AP6027769

The author thanks D. Ya. Tsvankin for taking x-ray photographs of
pemosor samples. Orig. art. has: 8 figures. [Based on authors'
abstract]

[NT]

SUB CODE: 07/ SUBM DATE: 30Jun65/ ORIG REF: 002/ OTH REF: 001

Cord 2/2 ho

L 37010-00 EWP(J)/EWT(M)/T IJP(C) RM/WW/JWD

ACC NR: AP6023434

SOURCE CODE: UR/0190/66/008/007/1312/1313

AUTHOR: Slonimskiy, G. L.; Andrianov, K. A.; Zhdanov, A. A.; Levin, V. Yu.; Belavtseva, Ye. M.

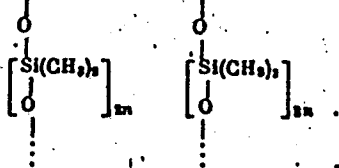
ORG: none

TITLE: Supramolecular structures of cross-linked high elastic polymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 7, 1966, 1312-1313

TOPIC TAGS: elastic polymer, ~~morphological form~~, supramolecular form, globular structure, siloxane, aluminosiloxane, polyaluminodimethylsiloxane, network structure, rubber, polymer cross linking, polymer structure, polycondensation, solubility, elasticity

ABSTRACT: A study of the structure of cross-linked polyaluminodimethylsiloxane rubber was completed by means of electron microscopic photographs of platinum-carbon replica. A UMV-100 electron microscope was used. The rubber used had the following chemical structure:



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UDC: 678.01:53+678.84

L 37010-66

ACC NR: AP6023434

2

Polycondensation was carried out at 200C for 40 hours, after which the rubber lost its solubility completely, but preserved its elasticity. The electron microscopic photographs revealed a globular structure, with the smallest globules being 50—100 Å. Individual larger globules of 300—500 Å and aggregates of 3000—5000 Å were also observed. It was demonstrated that the cross-linked insoluble polyaluminodimethylsiloxane has morphological forms similar to those of the soluble high elastic polyaluminosiloxane. Curing is caused by the reaction of globular formations, either by chemical reactions, e.g., of OH groups, or by physical cohesion. The study revealed a previously unknown type of network structure of high elastic polymers. The structure is formed by coiling the elastic macromolecular chains and therefore can display high reversible deformations. In the opinion of the authors this concept of the globular network structure can be expanded to other polymers.

[BN]

SUB CODE: 07, 11/ SUBM DATE: 05Feb66/ ORIG REF: 003/ ATD PRESS: 5035

ms
Card 2/2

SKAFA, B.F., kand.tekhn.nauk; MAKHNO, D.Ye., inzh.; STUROV, I.A., inzh.;
GARGONOV, A.T., inzh.; BATYGIN, S.P., inzh.; BELAY, B.G., inzh.

Results of the testing of shield support units. Sbor.DonUGI
no.20:16-38 '61. (MIRA 15:6)

(Donets Basin--Mine timbering)

KRIVOSHEYEV, A.Ye., inzhener; BELAY, G.Ye., inzhener; RUDNITSKIY, L.S.,
inzhener.

Centralized production of magnesium alloys. Lit.proizv. no.3:24-25
Mr '56. (MLRA 9:7)
(Magnesium alloys) (Cast iron--Metallurgy)

18(4)

SOV/122-59-7-23/25

AUTHOR: Krivosheev, A.E., Doctor of Technical Sciences,
Rudnitskiy, L.S., Candidate of Technical Sciences and
Belay, G.Ye., Engineer

TITLE: Up-to-Date Methods in Producing Magnesium Master-Alloys

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 7, pp 45-47 (USSR)

ABSTRACT: The preparation of industrial castings from magnesium cast iron with spheroidal graphite formation (spheroidal cast iron) requests an improvement of the cast iron processing method. So far the Mg-Alloy is produced by the consumer and according to different methods of production. It is urgently necessary to accomplish an immediate central production of Mg-alloys. Out of the many domestic and foreign patents in this field the silicon-Mg and the nickel-Mg alloys have found the widest propagation. The various methods described in the literature are uneconomic. During 1955/56 the Metallurgical Plant in Zaporozhyehad elaborated a

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SOV/128-59-7-23/25

Up-to-Date Methods in Producing Magnesium Master-Alloys

method for the central production of alloys (Liteynoye Proizvodstvo, 1956, Nr 3). This plant has produced 20 tons of Si-Mg alloy with a contents of 6 to 14% of magnesium. The "new" method suggested by the author D. Ye. Miklukhin and Belonsov L.A. (Liteynoye Proizvodstvo, 1958 Nr 5) is incorrect, too expensive, and, following this suggestion, it is not possible to produce alloys of equal value. The authors of this article suggest an improved method and do not agree with the quoted authors fighting a central production of alloys. The authors of this article request from GOST the elaboration of uniformly binding work specifications, but not based on the method suggested by Miklukhin and Belonsov. There are 2 diagrams and 9 Soviet references

Card 2/2

BELAY, G.Ye.

Founding in the German Federal Republic. Lit. proizv. no.12:
40-44 D '61. (MIRA 14:12)

(Germany, West—Founding)

KRIVOSHEYEV, A.Ye.; RUDNITSKIY, L.S.; BELAY, G.Ye.; NIKOLAYEV, N.A.;
Prinimali uchastiye: PARSHIN, A.A.I.; KNYAZHANSKIY, M.U.; BELYY, N.I.;
CHERKUN, N.A.; NECHAYEVA, Z.A.; LEV, I.Ye.; BUNINA, Yu.K.

Iron mill rolls of cerium cast iron. Stal' 23 no.3:278-282 Mr
'63. (MIRA 16:5)

1. Dnepropetrovskiy metallurgicheskiy institut (for Krivosheyev,
Rudnitskiy, Belay, Nikolayev, Lev, Bunina). 2. Dnepropetrovskiy
chugunoval'no-delatel'nyy zavod (for Parshin, Knyazhanskiy, Belyy,
Cherkun, Nechayeva).

(Rolls (Iron mills))

KRIVOSHEYEV, A.Ye.; LEV, I.Ye.; RUDNITSKIY, L.S.; BELAY, G.Ye.

Cerium distribution among phases in white cast iron. Fiz. met.
i metalloved. 16 no.2:313-316 Ag '63. (MIRA 16:8)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Cast iron--Metallography)
(Cerium--Metallography)

BELAY, G.Ye.; GERASIMOVA, T.I.; YATSENKO, A.I.

Kinetics of the graphitization of cerium cast iron. Lit.proizv.
no.7:22-23 J1 '64. (MIRA 18:4)

KRIVOSHEYEV, A. Ye.; LEV. I. Ye.; RUDNITSKIY, L.S.; BELAY, G. Ye.

Distribution of cerium among phases in gray cast iron and its effect on the structure. Izv. vys. ucheb. zav.; Chern. met. 8 no.1:130-135 '65 (MIRA 18:1)

1. Dnepropetrovskiy metallurgicheskiy institut.

KRIVOSHEYEV, A.Ye., doktor tekhn.nauk; RUDNITSKIY, L.S., inzh.; BELAY, G.
Ye., inzh.; NIKOLAYEV, N.A., inzh.

Rolls made of low-phosphorus cast iron with spheroidal graphite.
Mashinostroenie no.4:44-47 J1-Ag '63. (MIRA 17:2)

1. Dnepropetrovskiy metallurgicheskiy institut.

KRIVOSHEYEV, A.Ye.; LEV, I.Ye.; RUDNITSKIY, L.S.; BELAY, G.Ye.

Distribution of cerium between the phases of cast iron. Lit.proizv.
no.7:23-24 J1 '64. (MIRA 18:4)

TARAN, Yu.N. (Dnepropetrovsk); LEV, I.Ye. (Dnepropetrovsk); YATSENKO, A.I. (Dnepropetrovsk); BELAY, G.Ye. (Dnepropetrovsk); Prinsipali uchastiye; GERASIMOVA, T.I., inzh.; KURASOV, A.N.

Specific features of the eutectic crystallization of cast iron inoculated with cerium. Izv. AN SSSR. Met. no.3:131-139 My-Je '65.
(MIRA 18:7)

LEV, I.Ye.; BELAY, G.Ye.; TARAN, Yu.N.; YATSENKO, A.I.

Investigating the distribution of cerium in cast iron with the help
of an electron probe. Fiz. met. i metalloved. 20 no.2:236-242 Ag
'65. (MIRA 18:9)

1. Dnepropetrovskiy metallurgicheskiy institut i Nauchno-issledovatel'-
skiy institut chernoy metallurgii, Dnepropetrovsk.

BELAY, Jozsef, Dr.

Second five-year plan of the navigation. Kozleked kozl 18 no.16:262-
267 Ap '62.

GYOCSI, Jeno; PAISCH, Mador; BELAY, Jozsef, dr.

Situation report on autumn traffic. Kozleked kozl 18 no.41:737-739 14 0 '62.

1. MAV igazgato, Kozlekedes- es Postaugyi Miniszterium I/8.szak-osztaly vezetohelyettese (for Gyocsi). 2. Kozlekedes- es Postaugyi Miniszterium Autokozlekedesi Vezeregazgatosaganak helyettes vezetője (for Paisch). 3. Kozlekedes- es Postaugyi Miniszterium V.Hajozasi Fozosztaly vezetője (for Belay).

BERENYI, Laszlo; BELAY, Jozsef, dr.

Atomic power-driven submarine. Jarmu mezo gep 12 no.1;38 Ja '65.

Current problems of Hungarian navigation. Ibid.138

1. Director General, Hungarian Shipping Company, Ltd.,
Budapest (for Belay).

BELAY, Jozsef, dr.

Our inland navigation and autumn traffic. Kozleked kozl 20 no.40:
654-655 4 0 '64.

1. Head, Department of Navigation of the Ministry of Transportation
and Postal Affairs, Budapest.

BELAY, J.

A navigation study tour in the Soviet Union. p.238.

KOZLEKEDESTUDOMANYI SZEMLE. Budapest, Hungary. Vol. 8, no. 6, June 1958.

Monthly List of East European Accessions (EEAI), LC. Vol. 8, No. 9, September 1959
Uncl.

BELAY, MARIA, DR.

GEDEON, Gyula, Dr.; BELAY, Maria, Dr.

Significance of blood transfusion in the therapy of tuberculosis of female genitalia. Magy. noorv. lap. 22 no.2:104-108 May 57.

1. A budapesti Orvostudományi Egyetem II. sz. női klinikájának közleménye (Igazgató Zoltán Imre dr. egyetemi tanár).

(BLOOD TRANSFUSION, in various dis.

tuberc. of female genitalia, indic. & eff. (Hum))

(TUBERCULOSIS, FEMALE GENITAL, ther.

blood transfusion, indic. & eff. (Hum))

SZEMESI, Imre, Dr.; VARGA, Kalman, Dr.; BRIAY, Maria, Dr.

Significance of serial directed punctures and adequate locally administered antibiotics in the therapy of adnexal tumors. Magyar. orv. lap. 21 no.3:135-145 June 58.

1. A Budapesti Orvostudományi Egyetem II. sz. női klinikájának közleménye
(Igazgató: Zoltan Imre dr. egyetemi tanár)

(UTERUS NEOPLASMS, ther.

adnexa uteri, serial punctures for pus drainage & local antibiotics (Hun))

(PUNCTURES

serial punctures for pus drainage in tumors of adnexa uteri (Hun))

(ANTIBIOTICS, ther. use

tumors of adnexa uteri, local admin. (Hun))

BELAY, MARIA, DR.

SZEMESI, Imre, Dr.; BOZSOKY, Sander, Dr.; BELAY, Maria, Dr.

Examination of hyaluronidase inhibition in the serum of cancer patients.
Magy. noorv. lap. 21 no.5:261-265 Oct 58.

1. A Budapesti Orvostudományi Egyetem II. sz. Női Klinikájának (Igazgató:
Zoltan Imre egyetemi tanár) és az Országos Reuma-és Furdougyi Intézetnek
(Igazgató: Farkas Karoly, az orvostudományok doktora) közleménye.

(NEOPLASMS, blood in

hyaluronidase inhib. activity of serum in cancer patients
(Hun))

(HYALURONIDASE, antag.

in blood serum of cancer patients (Hun))

LEDER, Jozsef, dr.; BELEY, Maria, dr.; CSERNOHORSZKY, Vilmos, dr.;
JAKAB, Tivadar, dr.

Anesthesia in thymectomy performed during myasthenia gravis.
Magy sebeszet 13 no.6:390-393 D '59.

1. A Budapesti Orvostudományi Egyetem I. sz. Sebészeti
Klinikájának közleménye Igazgató: Hedri Endre dr. egyet.
tanár.

(MYASTHENIA GRAVIS surg)

(THYMUS GLAND surg)

PARIN, V. V.; VASIL'YEV, P. V.; BELAY, N. Ye.

"Some problems of reactivity in cosmic medicine."

report submitted for 15th Intl Astronautical Cong, Warsaw, 7-12 Sep 64.

BELAY, S.

Let us build up good centers for the protection of plants! p. 28.
MECHANISACE ZEMEDELSTVI. Vol. 5, No. 2, Jan. 1955

SO: Monthly East European Accession, (EEAL), LC, Vol. 4, No. 9, Sept. 1955 Uncl.

BELAY, S.

Belay, S.

Fulfilling the plan for checkrow seeding and planting. p. 168.

Vol. 5, no. 9, May 1955
MECHANISACE ZEMEDILSTVI

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 9,
Sept. 1955, Uncl.

BELAY, S.

Belay, S.

Mechanized work in stables, a joyful work. p. (2) of cover.

(Vol. 5, no. 10, May, 1955.)
MECHANISACE ZEMEDILSTVI

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 9,
Sept. 1955, Uncl.

BELAY, S.

Belay, S.

Let us not slow down in our work effort. p. 2. of cover.

(Vol. 5, no. 11, June 1955.)

MECHANISACE ZEMEDILSTVI

SO: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 9,
Sept. 1955, Uncl.

BELEY, V.Ye.; VASIL'YEV, P.V.; SAKSONOV, P.P.

Data on the comparative pharmacological characteristics of various
salts of mercamine. Farm. i tsk. 23 no. 5:450-455 S-O '60.
(MIRA 13:12)

(ETHYLAMINE)

Legitimizing mercamine salts

BELAY, V.Ye.; VASIL'YEV, P.V.; SAKSONOV, P.P.; CHERNENKO, G.T.

Reactivity of the organism to drugs in radiation sickness.

Med.rad. no.11:72-78 '61.

(MIRA 14:11)

(RADIATION SICKNESS)

VOLYNKIN, Yu.M.; YAZDOVSKIY, V.I.; GENIN, A.M.; VASIL'YEV, P.V.;
GYURDZHIAN, A.A.; GUROVSKIY, N.N.; GORBOV, F.D.; SERYAPIN,
A.D.; BELAY, V.Ye.; BAYEVSKIY, R.M.; ALTUKHOV, G.V.;
KOPANEV, V.I.; KAS'YAN, I.I.; YEGOROV, A.D.; SIL'VESTROV,
M.M.; SIMPURA, S.F.; TERENT'YEV, V.G.; KRYLOV, Yu.V.; FOMIN,
A.G.; USHAKOV, A.S.; DEGTYAREV, V.A.; VOLOVICH, V.G.;
STEPANTSOV, V.I.; MYASHNIKOV, V.I.; YAZDOVSKIY, V.I.; KASHIN,
P.S., tekhn. red.

[First space flights of man; the scientific results of the
medicobiological research conducted during the orbital
flights of the spaceships "Vostok" and "Vostok-2"]Pervye
kosmicheskie polety cheloveka; nauchny rezul'taty mediko-
biologicheskikh issledovaniy, provedennykh vo vremya orbi-
tal'nykh poletov korablei-sputnikov "Vostok" i "Vostok-2."
Moskva, Izd-vo Akad. nauk SSSR, 1962. 202 p. (MIRA 15:11)
(SPACE MEDICINE) (SPACE FLIGHT TRAINING)

ACCESSION NR: AT4042642

S/0000/63/000/000/0006/0008

AUTHOR: Akulinichev, I. T.; Bayevskiy, R. M.; Belay, V. Ye. Vasil'yev, P. V.; Gazenko, O. G.; Kakurin, L. I.; Kotovskaya, A. R.; Maksimov, D. G.; Mikhaylovskiy, G. P.; Yazdovskiy, V. I.

TITLE: Results of physiological investigations aboard the "Vostok-3" and "Vostok-4" spaceships

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy* konferentsii. Moscow, 1963, 6-8

TOPIC TAGS: biomedical monitoring, electrooculogram, pneumogram/Vostok-3, Vostok-4, EEG, EKG

ABSTRACT: A number of physiological indices were monitored during the tandem spaceflights of Nikolayev and Popovich (Vostok-3 and Vostok-4). New procedures used for the first time on these flights and improvements of existing equipment yielded a great deal of physiological information. Weightless-Card 1/5

ACCESSION NR: AT4042642

ness had no noticeable effect on the functional state of the CNS in either cosmonaut, as evaluated on the basis of performance of various tasks. EEG's showed a dominance of comparatively high-amplitude rhythms with a frequency of 5 to 7 cps, similar to those observed in athletes after intense physical exertion, during the first hours of weightlessness. Later a gradual shift toward beta-rhythms with a reduced mean amplitude of EEG biopotentials occurred. Heightened emotional stress in the first hours of flight and before reentry was reflected in decreased electrical resistance of the cortex. Functional stability of the higher involuntary nervous centers is indicated by the maintenance of normal daily variation of cortical resistance--higher at night, lower during the daytime--during the rest of the flights. EOG's (electrooculograms) were used as an index of the functional state of the vestibular apparatus. Asymmetries in oculomotor reaction, which could have indicated disturbances of the vestibular centers, were not observed in either cosmonaut. Vestibular tests not supplemented by EOG's also failed to yield any evidence of vestibular disturbance. Oculomotor activity was also used as an index of general and motor activity. Variations in oculomotor activity had a phase character. At the beginning of the flight Nikolayev, and to

Cord 2/5

ACCESSION NR: AT4042642

a lesser degree Popovich, showed an increase of oculomotor activity up to 4 to 6 eye movements per second. Eye movements of an uncoordinated character, of both large and small amplitude, were recorded. On the 6th and 7th orbits eye movement fell off, and later EOG's show periodic increases and decreases in oculomotor activity. Toward the end of the flight a second stable increase in oculomotor activity occurred, but its level was lower than at the beginning of the flight. Cardiac activity was monitored by EKG's (using chest leads). Increased pulse rates (from 98 to 112 for Nikolayev, and from 94 to 136 for Popovich) occurred immediately before launch, with corresponding shortening of the PQ and QT intervals. EKG changes during the powered-flight phase were similar to those observed in ground experiments with centrifuging. The maximum pulse rate during the first minute of flight was 136 for Nikolayev and 132 for Popovich. Normalization of pulse rates to the rates observed 4 hr before launch took place on Nikolayev's 6th and 7th orbit and on Popovich's 3rd to 4th orbit. Normalization of pulse to initial rates took 5 to 10 min during tests. No IKG changes indicating disturbances of automatism, excitability, or conductivity were observed. In flight Popovich registered 3 separate extra

Card

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ACCESSION NR: AT4042642

systoles; this had also occurred during training tests. The character of daily variation of cardiac activity remained unchanged. Pneumographic data revealed no respiratory irregularities. Some increase in respiration rate was noted during the powered-flight phase; this had also been observed during centrifuge tests. No pathological change in physiological functions of either cosmonaut was observed during flight. During the powered-flight phase, functional shifts similar to those observed during centrifuge tests occurred. Definite changes in the functional state of various physiological systems took place during the first hours of orbital flight, as indicated by the inhibition of pulse-rate normalization and the character of EEG and cortical resistance changes. Changes in the character of EEG's during prolonged (3 to 4 days) weightlessness indicate shifts in the interaction of excitation-inhibition processes in the higher levels of the CNS. However, the mental activity and neuro-regulatory functions of the cosmonauts remained at a high level.

ASSOCIATION: none

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ACCESSION NR: AT4042642

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

Card 5/5

ACCESSION NR: AT4042662

S/0000/63/000/000/0096/0101

AUTHOR: Vasil'yev, P. V.; Belay, V. Ye.

TITLE: Effect of drugs on resistance to acceleration stress

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963.
Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 96-101

TOPIC TAGS: acceleration, rabbit, mouse, adrenalin, antiacceleration drug, phenamine, ephedrine, chloral hydrate, pentothal, dog, rat, pharmacological agent

ABSTRACT: The effects of adrenalin, noradrenalin, phenamine, phenatine, ephedrine, chloral hydrate, and pentothal were tested on white mice, rats, rabbits, and dogs for the purpose of determining whether these substances can increase the resistance of animals to accelerations. Solutions of these substances were administered intraperitoneally in mice and rats and intravenously, subcutaneously, or intramuscularly in rabbits and dogs. Experiments with adrenalin and noradrenalin on both rabbits and mice gave contradictory and indefinite results. Experiments with phenamine gave positive results. When doses of phenamine ranging

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from 0.8 to 1 mg/kg were administered intraperitoneally 15--30 minutes before the animals were subjected to accelerations of 50-55g, the resistance of the animals to effects of accelerations (based on LD₅₀) increased by 8.7 g as compared with the controls. If phenamine was administered in doses of 1--3 mg/kg, the positive effect of phenamine was lowered, and when doses of 5 mg/kg were administered, a negative result was observed. Satisfactory results were obtained with ephedrine. Best results with ephedrine were obtained when doses of 0.5 mg/kg were used. If the dosage was cut in half, ephedrine was ineffective, whereas if the dosage was increased, it lowered the positive effect of the drug. Further experiments with adrenalin are being performed using rabbits and administering the drug intramuscularly. Experiments with narcotics (chloral hydrate and pentothal) gave rather indefinite results. Analysis of data obtained in the experiments indicates that by using pharmaceutical agents to change the functional condition it is possible to increase the resistance of the organism to the effects of acceleration.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Card 2/2

SAKSONOV, P.P., polkovnik meditsinskoy sluzhby; VASIL'YEV, P.V.; polkovnik meditsinskoy sluzhby; BELAY, V. Ye., podpolkovnik meditsinskoy sluzhby; CHERNENKO, G.T., podpolkovnik meditsinskoy sluzhby

Characteristics of the action of drugs in acute radiation sickness; a review of the literature. Voen. - med. zhur. no.1: 44-50 1963. (MIRA 17:8)

BELAY, V.Ye.; VASIL'YEV, P.V.; KOLCHIN, S.P. (Moskva)

Reactivity of the animal body to narcotics following a prolonged effect of lateral acceleration. Farm. i toks. 26 no.5: 559-563 S-O '63. (MIRA 17:8)

PARIN, V. V.; VASIL'YEV, P. V.; BELAY, V. Ye.

"Reactivity in space medicine."

report presented at the 15th Intl Astronautical Cong, Warsaw, 7-12 Sep 64.

L 41619-65 EWO(j)/EWT(m) GS

ACCESSION NR: AT5008046

S/0000/64/000/000/0211/0219

AUTHOR: Saksonov, P. P.; Vasil'yav, P. V.; Belay, V. Ye.; Vedernikov, A. N.;
Chernenko, G. T.

TITLE: Prophylaxis of diseases caused by multiple external gamma radiation

SOURCE: Patogenez, eksperimental'naya profilaktika i terapiya luchevykh porazheniy
(Pathogenesis, experimental prevention, and therapy of radiation injuries); sbornik
statey. Moscow, Izd-vo Meditsina, 1964, 211-219

TOPIC TAGS: gamma radiation, cystamine, radiation sickness, radiation protection

ABSTRACT: Tests were conducted on white mice and white rats to determine the ef-
fectiveness of certain antiradiation agents in different variants of multiple ir-
radiation. The prophylactic agents were cystamine, cystaphen-cystamine in combi-
nation with phenatin, and isotyphen- β -aminoethylisothiuronium in combination with
phenatin. The protective compounds have a prophylactic action both in single and
in multiple irradiation of animals, and increase the survival rate by 8-25%. In the
case of prior repeated administration of protective agents and subsequent one-time

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irradiation, the antiradiation action of the preparations is preserved; however, the percentage of survival of the animals is less than in the case of a single administration of the protective agent. Orig. art. has: 5 tables.

ASSOCIATION: none

SUBMITTED: 19Aug54

ENCL: 00

SUB CODE: LS, NP

NO REF SOV: 002

OTHER: 008

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Card 2/2

YAZDOVSKIY, V.I.; ALTUKHEV, A.Y.; BELAY, V.Yo.; YEGOROV, A.D.; KOPANEV.V.I.

Neuroemotional stress of astronauts in space flight. Izv. AN
SSSR Ser. biol. no.2:306-311 Mr-Apr'64 (MIRA 17:3)

ACCESSION NR: AT4037702

S/2865/64/003/000/0318/0323

AUTHOR: Belay, V. Ye.; Vasil'yev, P. V.; Kolchin, S. P.

TITLE: Effect of prolonged transverse acceleration on the functional state of the central nervous system in animals

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 3, 1964, 318-323

TOPIC TAGS: acceleration, centrifuge, mouse, rat, central nervous system, chloral hydrate, narcosis, sodium pentothal, conditioned reflex

ABSTRACT: The functional state of excitation-inhibition processes in the cerebral cortex and subcortical structures under the effect of transverse accelerations of various magnitudes and durations was studied in 467 mice and 80 rats. The functional state was estimated on the basis of response to two narcotics, the first (chloral hydrate) acting primarily on the cortex and the second (sodium pentothal) on the subcortical structures. Acceleration was generated on a centrifuge with a radius of 3.7 m. The usual direction of acceleration was back-to-chest. The general condition and behavior of the animals depended on the magnitude and dura-

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tion of loading. Acceleration of 13 g for 9 min produced depression, quiescence, and tremor, while the same acceleration for 3 min produced general excitation expressed in increased motor activity and aggressiveness. Reaction to the drugs also varied with the magnitude and duration of acceleration. The duration of chloral hydrate narcosis in mice subjected to 13 g for 3 min was half that observed in the controls; the same acceleration for 9 min caused narcosis to last more than twice as long as it did in the controls. Analogous results were obtained with rats, though the differences between centrifuged animals and controls were less pronounced. Tests with sodium pentothal produced exactly opposite results. Acceleration of 13 g for 3 min increased the duration of sodium pentothal narcosis, while 9 min of the same acceleration decreased it. Tests conducted to determine the time required after centrifugation for excitation-inhibition processes to return to normal showed that chloral hydrate narcosis of close to normal duration can be obtained only when the drug is administered at least 2 hr after centrifugation. This may be compared with a normalization time of 10 to 15 min for conditioned reflexes. It is concluded that longer (9 min) accelerations result in inhibition of the cortex and excitation of subcortical structures, while the briefer

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(3 min) accelerations excite the cortex and inhibit the subcortical structures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 008

OTHER: 003

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